



PLATE 4.

Ornithoptera victoriae archeri, subsp. nov. (top) male holotype, upperside; (bottom) female allotype, upperside.

A NEW SUBSPECIES OF *ORNITHOPTERA VICTORIAE* GRAY (PAPILIONIDAE) FROM CHOISEUL, SOLOMON ISLANDS

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The spectacular birdwing butterfly *Ornithoptera (Aetheoptera) victoriae* Gray is endemic to the Solomon Islands, in the South West Pacific. The females of Queen Victoria's Birdwing, particularly those found on Malaita, are amongst the largest butterflies in the world. This species was first captured by gunfire, having been shot down by John McGillivray, naturalist on the voyage of the 'Herald', in about 1854. The precise location at which this specimen was captured is not known, but it is now the holotype of *victoriae*, it is preserved in the British Museum (Natural History) at South Kensington, and is considered to have originated from Guadalcanal. The first male *victoriae* was obtained some 30 years later, also by gunshot, off Malaita Island. Subsequently, most of the major islands of the Solomons (including Bougainville, which politically belongs to Papua New Guinea), and a few smaller islands in the group, have proved to be habitats for the butterfly.

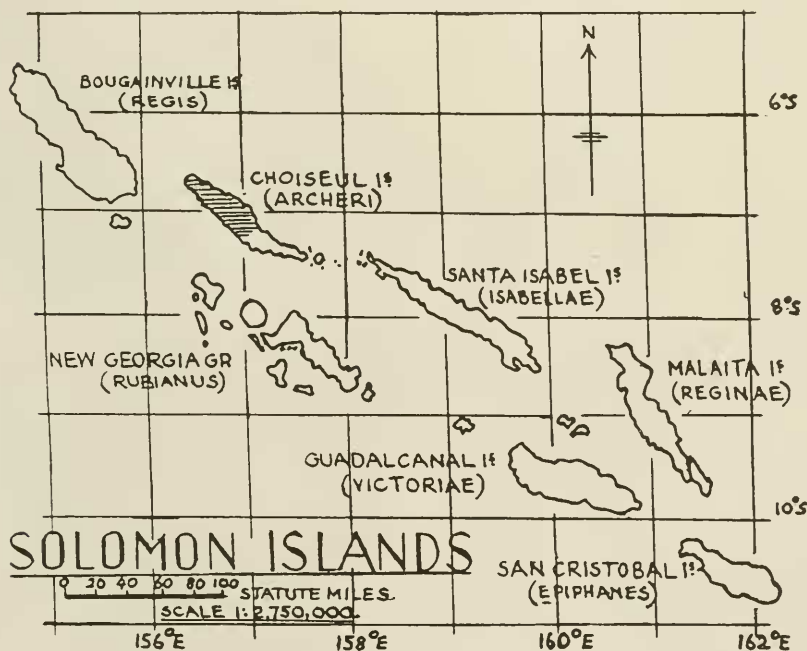


Fig. 1 Map of Solomon Islands indicating known distribution and subspecies of *Ornithoptera victoriae*.



The volcanic Solomon Islands are surrounded by deep ocean, and form a relatively close chain—some of the main islands are only 20 miles apart (fig. 1). Local differentiation of *O. victoriae* occurs, and six subspecies are generally recognised:

<i>O. victoriae victoriae</i> Gray, 1856.	Type-locality: Guadalcanal
<i>O. victoriae reginae</i> Salvin, 1888.	Type-locality: Malaita
<i>O. victoriae regis</i> Rothschild, 1895	Type-locality: Bougainville
<i>O. victoriae isabellae</i> Rothschild, 1901.	Type-locality: Santa Isabel
<i>O. victoriae rubianus</i> Rothschild, 1904.	Type-locality: Rendova
<i>O. victoriae epiphanes</i> Schmid, 1970.	Type-locality: San Cristobal

Subspecies *rubianus* is known from several of the New Georgia group of islands, including New Georgia (Racheli, 1980), Vella Lavella (material in BMNH), and Ganongga, Gizo, Kolombangara, Rendova and Gatukai (Ohya, 1983), and shows quite considerable variation in size and pattern from island to island. The nominotypical subspecies, taken to be from Guadalcanal, also occurs on the nearby Florida Islands. In addition to San Cristobal, subspecies *epiphanes* also flies on the offshore islands of Bauro (Schmid, 1970), Santa Ana and Ugi. The Bougainville race, *regis*, has also been doubtfully recorded from Alu (Haugum & Low, 1978), Shortland (Ohya, 1983), and Choiseul (see discussion below). The two remaining subspecies are only known to fly on their respective major islands (*reginae* on Malaita, and *isabellae* on Santa Isabel). With the possible exception of *rubianus*, the known subspecies show considerable phenotypic instability and 'overlap' (Haugum & Low, 1978: 48).

The six subspecies also account for the occurrence of *O. victoriae* on all the main islands of the Solomons—except Choiseul. Until now there have been conflicting reports and opinions concerning the presence of *victoriae* on this island. According to Haugum & Low (1978), in their extensive account of the butterfly, 'The populations of Choiseul Isl. was given the name *resplendens* by Ehrman [sic] (1925) but placed in synonymy of *regis* by Schmid (1970).' They also write that 'Whenever new data and material enables a wider survey of the *victoriae*-complex to be undertaken, we suggest that the Choiseul Isl. populations of *victoriae regis* (= *resplendens* Ehrm.) also be taken into consideration.' Ehrmann (1926) described *O. resplendens* from Choiseul, apparently based on abundant specimens secured by 'Prof. Wm Reiff—however, the wording of the original description is ambiguous. Of potentially greater significance is the fact that Ehrmann compared *resplendens* with *victoriae* from Guadalcanal, Malaita, New Georgia group and Santa Isabel—but not Bougainville. His rather surprising ignorance of Rothschild's earlier description of *regis* is made understandable by the introductory comments of Holland (1927), who also illustrated the 'male and female types' of *resplendens*, noting that the female was said to have been collected by Meek'. A.S. Meek is known to have collected many *regis* on Bougainville for Walter Rothschild (Haugum & Low, 1978), but the Rothschild Collection (now in BMNH) appears never to have contained any *victoriae* from Choiseul.

Schmid (1970), who studied eight males and fifteen females of *victoriae* in the American Museum of Natural History labelled 'Choiseul', in addition to the 'male and female types' of *resplendens*, was emphatic that the latter was a synonym of *regis*—an opinion easily appreciated by comparing the illustration of the female type in Holland (1927) with typical Bougainville *regis*. Schmid's synonymy has been

Fig. 2 *Ornithoptera victoriae archeri*, subsp. nov. (top) male holotype, underside; (bottom) female allotype, underside.

followed by D'Abrera (1975), Racheli (1978), Haugum & Low (1978) and Ohya (1983) (but not by Igarashi, 1979, who treated *resplendens* as a valid Choiseul race). In the light of the fresh Choiseul material described below, which is quite unlike *regis* from Bougainville, or the *victoriae* races from neighbouring Santa Isabel or the New Georgia group, I am forced to conclude that the provenance of Ehrmann's *resplendens*, and the AMNH Choiseul *victoriae* studied by Schmid, is erroneous. However, this possibly does not apply to the bright *reginae*-like male reported from 'Choiseul, Sasamuga, 5.iii.1970, D.M. Wilson' by Schmid (1970)—this specimen is either a natural variation of the newly described Choiseul race, or a migrant individual which had flown to Choiseul from another island (a possibility suggested by the discussion of Haugum & Low, 1978: 48).

In 1974 Mr E.N. Archer spent over a month exploring the long and rugged island of Choiseul, where he found *victoriae* flying in many areas. The butterfly was immediately noticed to be very different from the much more colourful *regis* of Bougainville. Surprisingly, the Choiseul race appears to differ much more sharply from its neighbours *regis* and *rubianus* than it does from eastern Solomons subspecies. A prominent feature, in the male, is the absence of golden markings (save two small submarginal spots in hindwing cells M_2 and M_3). In the Choiseul race, all the more extensive golden areas of typical *regis* are replaced by a non-iridescent sap green colour, somewhat like that of *rubianus*. The female has much larger white patches and spots than *regis*, and a brownish base to the wings in place of yellow. All specimens observed were essentially constant in appearance; Mr Archer brought back four males and three females, which form the basis for the following description.

Ornithoptera victoriae archeri subsp. nov. (Pl.4 upperside and fig.2 underside)

Male. Forewing length 75 mm. (average).

Upperside. Ground colour velvety black. Forewing preapical patch non-iridescent sap green, roughly triangular, and divided into three sections by veins R_4 and R_5 . Forewing base also broadly sap green, with an overtone of burnished scales. Hindwing broadly pastel green from base to just beyond discal cell, with this area connected through the anterior cells to a distinct green submarginal band which encompasses two bright, golden-yellow submarginal spots in cells M_2 and M_3 . The black ground colour of the hindwing upperside is largely restricted to a narrow marginal band, and an interrupted, curved post-discal band, extending from cell R_5 through M_1 , M_2 and M_3 , becoming wider and more solid posteriorly, until it becomes confluent with a large wedge-shaped marking filling the anal angle. The veins delimiting the discal cell are clearly marked with green scaling, which also follow the branches of the median up to the black margin. The central area of the discal cell is blackish, having an overlay of green scales. Overall, the dorsal hindwing pattern is most similar to that of *O. v. reginae*.

Underside. Ground colour and veins black. A large part of the forewing and most of the hindwing sap green. On forewing a large triangular black mark extends broadly about the anterior apex of the discal cell. In addition, a series of five black, chevron-shaped submarginal marks runs from cell R_3 to cell M_2 , both points of each chevron in the three posterior cells being confluent with the black marginal band. On hindwing, apices of veins R_5 to Cu_{1B} marked with black, the marks on M_2 and M_3 being largest and somewhat rounded. Gold spots occur in cells M_2 and M_3 , corresponding to the gold spots of upperside. Anal margin suffused with golden scales. Overall, the underside is quite similar to that of other races (e.g., *O. v. regis*, as illustrated by Ohya, 1983: pl. 1, fig. 4).

Abdomen. Light cream ground colour, with lateral black spots on each segment, dorsal surface creamy mauvish-pink, claspers yellow.

Female. Forewing length 105 mm. (average).

Upperside. Dull black ground colour with a pattern of white patches, similar to nominotypical subspecies, i.e. much larger patches than in subspecies *regis*. On forewing white patches occur in discal cell, with up to nine large and small post-discal white areas, a preapical white spot in cell R_3 , and a row of seven submarginal white spots, from cell R_4 to cell Cu_{1b} . Base of discal cell has a brownish streak, and a similar sized and coloured mark occurs at base of anal cells, with a small brown streak in cell Cu_{1b} adjacent to base of vein 2A. On hindwing, five whitish submarginal patches in cells R_5 to Cu_{1a} , and a post-discal series of six larger patches from R_5 to Cu_{1b} . The posterior portion of cell R_1 and extreme base of discal cell brownish-biscuit coloured, with the anterior margin of the patch strongly sinuate.

Underside. Forewing very similar to upperside, but brownish marking at base of discal cell slightly more orange, smaller and clearly defined. Hindwing also similar to upperside, but all anterior and posterior pale areas coloured brownish-biscuit.

Abdomen. Creamish above except at extreme base, black beneath with orange-brown spots on the more distal sternites, ostial area all orange-brown.

Holotype ♂. Solomons, west Choiseul Island, Siravanga, 7.ix.1974, E.N. Archer.

Allotype ♀. Solomons, west Choiseul Island, Vudutaru Village, 11.ix.1974, E.N. Archer.

Paratypes, 3♂, 2♀, Choiseul Island, 1974, E.N. Archer.

All specimens in collection of E.N. Archer, Barnet, England.

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